

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re patent application of:	) MMB Docket No.: <b>1776-0014</b>
	)
Inventor: <b>John A. Moore</b>	) Xerox Docket No.: <b>D/A 2451</b>
	)
Application No.: <b>10/758,061</b>	) Examiner: <b>Giovanna B. Colan</b>
	)
Filed: <b>January 16, 2004</b>	) Group Art No.: <b>2162</b>
	)
For: <b>Method And System For</b>	) Confirmation No.: <b>5102</b>
<b>Managing Image Files In A</b>	)
<b>Hierarchical Storage</b>	)
<b>Management System</b>	)

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**BRIEF ON APPEAL**

Hon. Commissioner of Patents and Trademarks  
Alexandria, VA 20231

Sir:

This is an appeal under 37 CFR § 41.31 to the Board of Patent Appeals and Interferences of the United States Patent and Trademark Office from the final rejection of the claims 1, 3-10, 12-15, and 17-20 of the above-identified patent application. These claims were finally rejected in an Office Action mailed

on November 28, 2007. A Notice of Appeal with a Request for a Pre-Brief Conference was filed on January 28, 2008. A decision from the panel was received on March 7, 2008. This brief is being filed together with the \$500.00 fee required under 37 CFR § 41.20(b)(2) within the one month period given for the filing of an appeal brief following the panel decision. Thus, Applicant submits that no extension of time for the filing of this brief and fee is required, however, if any extension of time is necessary, Applicant hereby petitions for such an extension and authorizes payment of any fees that may be due to Account No. 24-3700, but not to include any payment of issue fees.

#### **(1) REAL PARTY IN INTEREST**

Xerox Corporation of Norwalk, Connecticut is the assignee of this patent application, and the real party in interest.

#### **(2) RELATED APPEALS AND INTERFERENCES**

There are no appeals or interferences related to this application serial number 10/758,061.

#### **(3) STATUS OF CLAIMS**

Claims 1, 3-10, 12-15, and 17-20 are pending in the application and claims 2, 11, and 16 were previously canceled.

Claims 1, 3-10, 12-15, and 17-20 have been twice rejected, and are being appealed.

Each of the appealed claims 1, 3-10, 12-15, and 17-20 is shown in the Claims Appendix attached to this Appeal Brief.

#### **(4) STATUS OF AMENDMENTS**

Appellant has filed no amendments subsequent to the Final Office Action mailed November 28, 2007.

#### **(5) SUMMARY OF CLAIMED SUBJECT MATTER**

Independent claim 1 is directed to a method of managing image files in a host system. The method includes identifying an image file stored in secondary storage for a host system (Specification, page 4, lines 7-23; FIG. 3, reference number 100). Metadata for the identified file is compared to a downgrade threshold (Specification, page 11, lines 8 – page 12, line 3; FIG. 3, reference number 104). The identified image file is downgraded in response to the comparison of the file metadata to the downgrade threshold (Specification, page 12, lines 4-20; page 13, line 14 – page 15, line 23; FIG. 3, reference numbers 108 - 114). The downgraded file is stored in the secondary storage of the host system (Specification, page 3, lines 7 – 9; page 13, lines 19 – 20; page 16, lines 5 - 7; FIG. 3, reference number 118) and the identified image file is stored in tertiary storage of the host system (Specification, page 3, lines 9 – 12; page 5, lines 3 – 6; page 9, lines 7 – 10; page 13, lines 6 -8; page 16, lines 7 – 9). The tertiary storage has an access time that is greater than the access time for the

secondary storage of the host system (Specification, page 7, lines 15 – 20). No step plus function limitations are present in any method claims being appealed.

Independent claim 11 is directed to a system for managing image files in a host system (Specification, page 15, lines 1-9; FIG. 2, reference number 18). The system includes a file data volume for storing file metadata that corresponds to image files stored in a secondary storage for a host system (Specification, page 7, line 15 – page 8, line 1; page 13, lines 1 – 3, FIG. 2, reference number 28). A file selector retrieves file metadata from the file data volume and compares the retrieved metadata to at least one downgrade threshold to identify an image file stored in the secondary storage of the host system for downgrading (Specification, page 5, line 23 – page 6, line 10; page 10, lines 8 – 12; FIG. 2, reference number 40). A file reducer downgrades the identified image file (Specification, page 5, lines 7 – 22; page 10, lines 11 – 18; FIG. 2, reference number 44). A file controller generates file metadata, stores the downgraded file in secondary storage for the host system, and stores the identified image file in tertiary storage for the host system (Specification, page 10, lines 5 – 8, and lines 13 – 18; FIG. 2, reference number 36). No means plus function limitations are present in any system claims being appealed.

## **(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

The first ground of rejection to be reviewed on appeal is whether Toda et al. (U.S. Publication Number 2002/0037100, hereinafter “Toda”) teaches storage of a downgraded file in the secondary storage from which the identified image

file used to generate the downgraded file was stored as required by claims 1, 3-10, and 12-14.

The second ground of rejection to be reviewed on appeal is whether Baba et al. (U.S. Publication Number 2001/0014172, hereinafter "Baba") teaches storage of the identified image file used to generate the downgraded file in tertiary storage as required by claims 1, 3-10, and 12-14.

The third ground of rejection to be reviewed on appeal is whether Toda teaches the reduction of pixel size as required by claims 6 and 20.

The fourth ground of rejection is whether Toda teaches the conversion of a color image from one format to another format that requires less data to represent the color image as required by claims 7 and 18.

The fifth ground of rejection is whether Toda teaches the retrieval of a full resolution version of the identified image file from tertiary storage and the performance of a downgrade operation on the full resolution version to generate the downgraded file as required by claim 10.

The sixth ground of rejection is whether Toda teaches the comparison of file metadata to a file access frequency threshold as required by claim 12.

The seventh ground of rejection is whether Toda or Baba teaches the comparison of file metadata to a last access time threshold as required by claim 13.

The eighth ground of rejection is whether Toda teaches the comparison of file metadata to a classification threshold as required by claim 14.

The ninth ground of rejection is whether Toda teaches a file data volume that stores files metadata that corresponds to image files stored in a secondary storage of a host system as required by claims 15 and 17-20.

The tenth ground of rejection is whether Toda teaches a file selector that retrieves file metadata from the file data volume and that compares the retrieved metadata to a downgrade threshold to identify an image file stored in secondary storage for downgrading as required by claims 15 and 17-20.

The eleventh ground of rejection is whether Toda teaches a file controller that generates file metadata for storage in the file data volume, that stores downgraded files in secondary storage of a host system, and that stores identified image files used to generate downgraded files in tertiary storage as required by claims 15 and 17-20.

## **(7) ARGUMENT**

The rejected claims do not stand or fall together.

First Ground of Rejection under 35 USC 103: Whether Toda teaches storage of a downgraded file in the secondary storage from which the identified image file used to generate the downgraded file was stored as required by claims 1, 3-10, and 12-14.

CLAIMS 1, 3-10, and 12-14

In order to establish a *prima facie* case of obviousness the Examiner must set forth the scope and content of the prior art along with the differences

between the prior art and the claimed invention. In the final office action, the Examiner has failed to identify accurately the content of the prior art and show that the prior art contains the limitations of the claimed invention. Each ground of rejection addressed herein demonstrates how the evidence cited by the Examiner fails to support the teaching that the Examiner asserts is present in the prior art. Therefore, the Examiner has not established that Applicant's claimed invention is an obvious combination of known elements or an obvious modification of a known system or method.

Claims 1, 3-10, and 12-14 all contain the limitation that a downgraded file generated from an identified image file be stored in the secondary storage in which the identified image file was stored. The Examiner cites FIG. 28 and paragraph [0142] of Toda as evidence that this limitation existed in the prior art. Specifically, the Examiner quotes the language "The binarization unit 2902 generates a binary image on the basis of the color document image 2901 loaded onto the RAM 2802..." and asserts that "the RAM 2809 (*sic*) corresponds to the secondary storage of the host system." The binary image, which the Examiner asserts is a downgraded file generated from the color document image, is stored in a different area of the RAM 2802. The Examiner then concludes that the binary image has been stored in the secondary storage in which the color document image is stored. *Final Office Action*, page 3, lines 10-15.

What the Examiner fails to appreciate is the language "loaded onto RAM 2802." In paragraph [0141], the color document image is clearly identified as being loaded onto the RAM 2802 from the external storage device 2804, image

input device 2808, or storage medium drive 2809. Thus, Toda teaches that these devices form the secondary storage for the system. The RAM 2802 is described as a temporary storage area or as a work area. *Toda*, paragraph [0135]. This understanding of Toda is consistent with the context of Applicant's invention as defined in Applicant's specification. On page 1, lines 7-20 of Applicant's specification, different types of memory are described with reference to access times. These differences are used to identify secondary and tertiary storage in a hierarchical management system. *Specification*, page 2, lines 2-9. Thus, the Applicant has defined the environment for understanding the meaning of "secondary storage" and "tertiary storage" as those terms are used in the claims. Providing the context for understanding a claim limitation is not reading a limitation from the specification into the claim as the Examiner contends.

Using the Examiner's proposed understanding is not giving the claim terms their broadest meaning, but rather turning Applicant's term meanings on their head. The Examiner is arguing that the RAM 2802 is secondary storage in comparison to the external storage device 2804, for example. Such meaning is diametrically opposed to the meaning of secondary storage as established by the Applicant for understanding the claimed invention. RAM memory has a shorter access time than disk drives or other external storage devices. *See Specification*, page 1, lines 15-20. Therefore, with reference to access times, external devices, such as disk drives, are *secondary* to RAM. The Examiner has asserted the opposite, namely, that RAM is secondary to an external storage device, an image input device, or a storage medium drive. Yet, the Examiner has



provided no support for such a reading and the burden of proof is on the Examiner to do so. Consequently, the Examiner has failed to show that the prior art teaches the limitation that a downgraded file generated from an identified image file be stored in the *secondary* storage in which the identified image file was stored. Because this limitation is in all of the claims 1, 3-10, and 12-14, the Examiner has failed to make a *prima facie* case that these claims are obvious over Toda in view of Baba.

Second Ground of Rejection under 35 USC 103: whether Baba et al. (U.S. Publication Number 2001/0014172, hereinafter "Baba") teaches storage of the identified image file used to generate the downgraded file in tertiary storage as required by claims 1, 3-10, and 12-14.

CLAIMS 1, 3-10, and 12-14

Claims 1, 3-10, and 12-14 all contain the limitation that the identified image file be stored in tertiary storage of the host system, the tertiary storage having an access time that is greater than the access time of the secondary storage. The Examiner cites paragraph [0102] of Baba as evidence that this limitation existed in the prior art. Specifically, the Examiner references the portion of this paragraph that indicates the original image is present on an external device before it is loaded into an internal memory device, which is faster than the external device. When the initial position of the original image is properly observed and the terms "secondary" and "tertiary" are interpreted with meanings consistent with the Applicant's use of those terms throughout the

specification and claims, the cited paragraph does not disclose this claim limitation.

Instead of providing the Examiner with evidence that the prior art taught this limitation, the paragraph supplies proof that the Examiner is turning the meaning of these terms upside down so he can arrive at the claim language. Applicants, not examiners, are allowed to be lexicographers. The word "tertiary" is clearly a reference to a *third* level of storage. The Examiner cites references that only differentiate between two levels of storage and he reverses those two levels as they are commonly understood. Therefore, no adequate support has been provided for the Examiner's assertion that the prior art teaches the limitation that the identified image file be stored in tertiary storage of the host system, the tertiary storage having an access time that is greater than the access time of the secondary storage. Thus, the final rejection of claims 1, 3-10, and 12-14 should be reversed.

Third Ground of Rejection under 35 USC 103: whether Toda teaches the reduction of pixel size as required by claims 6 and 20.

CLAIMS 6 and 20

Claims 6 and 20 require that pixel size in the identified image file be reduced to generate the downgraded file. The Examiner cites paragraph [0063] of Toda as evidence that this limitation is present in the prior art. That paragraph, however, states only that black pixels are reduced during thin-line conversion. Thin-line conversion is not explained and the context is unclear as to whether

black pixel reduction conclusively means that the *size* of the pixels is reduced. Because histograms are being referenced in the paragraphs following paragraph [0063], the conversion process may mean that the number of black pixels is reduced. In fact, a reduction in the number of pixels is most likely the meaning because the reduction unit 105 (FIG. 1) is described as implementing simple decimation. *Toda*, paragraph [0074]. Decimation means 10 percent of the items are removed. That is, nine out of ten pixels are kept without change to the size of the pixels and the tenth pixel is eliminated. Thus, reduction in the *Toda* reference more likely refers to decimation than it does to pixel size reduction. The problem for the Examiner is that the burden of proof is upon him to show that the reference teaches that the size of the black pixels is reduced as required by the claims. The cited evidence is insufficient to meet this burden and, therefore, the ground of rejection for claims 6 and 20 should be reversed.

Fourth Ground of Rejection under 35 USC 103: whether *Toda* teaches the conversion of a color image from one format to another format that requires less data to represent the color image as required by claims 7 and 18.

CLAIMS 7 and 18

Claims 7 and 18 require that generation of the downgraded file include a color image being converted from one color format to another color format that requires less data to represent color in the identified image file. The Examiner cites paragraph [0150] of *Toda* as evidence that this limitation is present in the prior art. That paragraph states that an RGB format may be converted to an LAB

or YCrCb format for purposes of color discrimination, not size reduction. In fact, the paragraph is evidence against the Examiner's position because following the conversion, size reduction is obtained by rounding the converted format to 2 or 3 bits. Thus, rounding, not the conversion from one format to another cited by the Examiner, reduces the size of the color data. Again, the burden of proof is on the Examiner to show that the claim limitation is disclosed in the cited prior art. The cited evidence is insufficient to meet this burden and, therefore, the ground of rejection for claims 7 and 18 should be reversed.

Fifth Ground of Rejection under 35 USC 103: whether Toda teaches the retrieval of a full resolution version of the identified image file from tertiary storage and the performance of a downgrade operation on the full resolution version to generate the downgraded file as required by claim 10.

Claim 10 requires that a full resolution version of the identified image file be retrieved from tertiary storage. Because claim 10 depends from claim 1, the identified image file is still stored in secondary storage. Thus, the claim requires the identified image file be in secondary storage and the full resolution version of the file be in tertiary storage. The Examiner cites paragraph [[0049] of Toda as teaching this limitation. That paragraph, however, references no storage location for reference image A and also fails to identify an identified image file that relates to the reference image A. Instead, paragraph [0049] and FIG. 1 relate image A to an original image and image B is a reduction of image A. The Examiner focuses on this latter process and inductively reasons that image A must be a full

resolution image. That reasoning ignores the description of the process shown in FIG. 1 that indicates the process begins with an original image that is processed by the binarization unit 102 and a text paint unit 104 to generate reference image A. Consequently, the original image appears to be the full resolution image and the storage in which the original image is located is not described as being either secondary or tertiary. In fact, the storage for the original image is not described at all in the paragraph cited by the Examiner. Therefore, the Examiner has failed to meet his burden of proof and the ground of rejection with respect to claim 10 should be reversed.

Sixth Ground of Rejection under 35 USC 103: whether Toda teaches the comparison of file metadata to a file access frequency threshold as required by claim 12.

Claim 12 requires that file metadata be compared to a file access frequency threshold. The Examiner asserts that Toda discloses such a comparison in paragraphs [0064] and [0094]. A review of these paragraphs indicates that neither paragraph refers to a file access frequency threshold. Paragraph [0064] discusses a method of computing representative values that includes selection of a density having a maximum frequency of occurrence in a histogram as a representative value. The Examiner cites to nothing that indicates this histogram relates to file access frequency and nothing indicates that representative values refer to file accesses. Paragraph [0094] is also unsupportive of the Examiner's position because it refers to the number of areas

with high frequency coefficients and not to file access frequency. High frequency as used in this paragraph does not refer to file accesses and the Examiner is silent as to what high frequency means or how the orthogonal transformations discussed in the paragraph relate to file accesses. This silence is most likely attributable to these terms referring to the content of the image data and not to access frequency for the image file. Thus, the Examiner has failed to cite evidence that proves this limitation is present in the prior art and the ground of rejection for claim 12 should be reversed.

Seventh Ground of Rejection under 35 USC 103: Whether Toda or Baba teaches the comparison of file metadata to a last access time threshold as required by claim 13.

Claim 13 requires that file metadata be compared to a last access time threshold. The Examiner asserts that Toda discloses such a comparison in paragraphs [0064] and [0094]. Paragraph [0064] discusses a method of computing representative values that includes selection of a density having a maximum frequency of occurrence in a histogram as a representative value. Nothing in the record indicates this histogram relates to the last time a file was accessed. Additionally, nothing indicates the representative values refer to a last time a file was accessed. Paragraph [0094] is also unsupportive of the Examiner's position because it refers to the number of areas with high frequency coefficients and not to the last time a file was accessed. High frequency as used in this paragraph does not refer to a time for file accesses and the Examiner is

silent as to what high frequency means or how orthogonal transformations relate to the time of file accesses. This silence is most likely attributable to these terms referring to the content of the image data and not to access times for the image file.

Paragraph [0102] of Baba also fails to support the Examiner's position as it discusses neither a comparison of file metadata nor a last access time threshold. The paragraph is Baba refers only to the speed of the internal memory unit being faster than that of the external storage device to support the image processing better. No history of file access is discussed in this paragraph. Thus, the Examiner has failed to cite evidence that proves the limitation in claim 13 is present in the prior art and the ground of rejection for claim 13 should be reversed.

Eighth Ground of Rejection under 35 USC 103: whether Toda teaches the comparison of file metadata to a classification threshold as required by claim 14.

Claim 14 requires that file metadata be compared to a classification threshold. The Examiner asserts that Toda discloses such a comparison in paragraphs [0087] and [0089]. Paragraph [0087] refers to no comparison or to any type of classification threshold. Thus, the citation of this paragraph appears to be a typographical error, but Applicant is without sufficient information to guess as to what the Examiner meant. Since the burden of proof is the Examiner's and not the Applicant's, the Applicant need not guess and the Examiner must correct this error.

Paragraph [0089] is also unsupportive of the Examiner's position because it refers to a comparison of image data to detect a reversed pattern and modifications to the binarization unit. Nothing in this paragraph refers to file metadata and the Examiner has not identified the file metadata in this paragraph. Additionally, the cited paragraph does not refer to a classification threshold to which file metadata are compared. Thus, the Examiner has failed to cite evidence that proves this limitation is present in the prior art and the ground of rejection for claim 14 should be reversed.

Ninth Ground of Rejection under 35 USC 103: whether Toda teaches a file data volume that stores files metadata that corresponds to image files stored in a secondary storage of a host system as required by claims 15 and 17-20.

Claims 15 and 17-20

Claims 15 and 17-20 require a file data volume that stores file metadata corresponding to the image files stored in a secondary storage of a host system. The Examiner asserts that the sets of black pixels discussed in paragraphs [0055] and [0056] are file metadata. That assertion is contrary to the understanding that file metadata are data about a file. Pixels, on the other hand, are the actual data in the file. The Examiner provides no support for his proposition that sets of black pixels are file metadata. Even more perplexing is the Examiner's position that "the text areas formed by the pixels corresponds (*sic*) to the file data volume as claimed." *Final Office Action*, page 8, lines 5-6. Applicant is unaware of any understanding in the art that text areas are data



volumes. The more common understanding, which is used in Applicant's specification, is that data volumes are hard disks, redundant arrays, or other relatively short access time storage for *files* that support host system operations. *Specification*, page 7, lines 16-18. Without verifiable support for the assertion that pixels are file metadata and that text areas are data volumes, this ground of rejection cannot stand and the rejection of claims 15 and 17-20 should be reversed.

Tenth Ground of Rejection under 35 USC 103: whether Toda teaches a file selector that retrieves file metadata from the file data volume and that compares the retrieved metadata to a downgrade threshold to identify an image file stored in secondary storage for downgrading as required by claims 15 and 17-20.

#### CLAIMS 15 and 17-20

Claims 15 and 17-20 require a file selector that retrieves file metadata from the file data volume and compares the retrieved metadata to a downgrade threshold to identify an image file stored in secondary storage for downgrading. The Examiner contends the text area detector is a file selector. Such a position would, in light of the Examiner's position with respect to the ninth ground of rejection, mean that the file selector selects a file data volume since the Examiner equates text areas with file data volumes. No explanation is given for the text areas becoming file metadata in this ground of rejection, while text areas are file data volumes in the previous ground of rejection. In fact, if the Examiner were consistent, the text area detector would have to retrieve sets of black pixels

as these sets were previously asserted by the Examiner as being file metadata. Regardless of the inconsistencies in the Examiner's positions, the claims are straightforward and simply require the file selector to retrieve file metadata from the file data volume. Nowhere does the Examiner cite evidence that the text area detector retrieves anything from a file data volume as that term is commonly understood.

The Examiner also maintains that the process of generating a binary image identifies a file for downgrading. That position fails for at least two reasons. For one, the comparison of a pixel to a threshold results in a *pixel* being assigned a black or white value, not a file. Another problem for the Examiner's position is that assigning a pixel a white or black value with reference to a threshold is not *identification* of a file for downgrading.

Clearly, the paragraphs in Toda cited by the Examiner refer to image data processing and not to system components that operate to determine whether a file is to be downgraded based on file metadata. The reading of the Toda reference submitted by the Examiner arises from the attempt to use a system that either compresses an image or expands a compressed image to disclose elements of a file management system. Only by asserting that pixels are files, sections of an image are file data volumes, and the like is one able to begin to stretch the reference to comport with the claims. Such imaginative readings do not accurately set forth the content of the prior art and cannot properly support a section 103 ground of rejection. Therefore, this ground of rejection should be reversed.

Eleventh Ground of Rejection under 35 USC 103: whether Toda teaches a file controller that generates file metadata for storage in the file data volume, that stores downgraded files in secondary storage of a host system, and that stores identified image files used to generate downgraded files in tertiary storage as required by claims 15 and 17-20.

#### CLAIMS 15 and 17-20

Claims 15 and 17-20 also require a file controller that generates file metadata, stores downgraded files in secondary storage, and stores identified image files in tertiary storage. The Examiner contends that paragraph [0087] teaches the generation of file metadata for storage in a file data volume.

Paragraph [0087], however, only discusses the text area detector coupling areas of an image together that have similar patterns and positions. No generation of file metadata to be stored in a file data volume, as that term is commonly understood, is disclosed.

The Examiner also contends that Toda and Baba disclose a file controller that stores an identified image file in tertiary storage. In support of this position the Examiner cites paragraph [0135] of Toda and paragraph [0102] of Baba. While these paragraphs refer to external storage devices, they do not refer to a file controller for any of these devices that store *identified* image files. In the context of these claims, identified image files are those files identified through the process of comparing file metadata to a downgrade threshold to determine whether a file is to be subjected to a downgrading operation. As noted above, this identification process is not disclosed by either cited reference and thus,

neither reference contains identified image files that can be stored. Accordingly, the prior art does not disclose the limitations in the claims and the section 103 ground of rejection should be reversed.

## CONCLUSION

As set forth above, the cited references do not disclose either a method for selecting images to be processed by the systems in either reference or systems components that store processed files in different types of storage. Instead, the cited references assume that one wants to process a particular image, but no method for selecting one image from a plurality of images is given. Thus, the cited references are devoid of teachings regarding file metadata, file data volumes containing file metadata, and the use of such data to select files for downgrade operations.

Likewise, the references do not disclose processes for controlling the storing of identified or downgraded files in different types of storage as determined by the access times of the storage. Again, the references assume something is done with an image, but no management of the processed or original image is disclosed. Consequently, these references do not disclose the limitations set forth in the pending claims directed to a method of managing files and a system for managing files in a host system. The Examiner's portrayal of the prior art and his analysis of the differences between the prior art and the claimed subject matter are too deficient to support the section 103 grounds of

rejection adequately. The Board of Appeals, therefore, is respectfully requested to reverse the rejection of pending claims 1, 3-10, 12-15, and 17-20.

Respectfully submitted,  
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## **(8) CLAIMS APPENDIX**

1. A method for managing image files in a host system comprising:
  - identifying an image file stored in secondary storage for a host system;
  - comparing file metadata for the identified image file to a downgrade threshold;
  - downgrading the identified image file in response to the comparison of the file metadata to the downgrade threshold;
  - storing the downgraded file in the secondary storage of the host system;
  - and
  - storing the identified image file in tertiary storage of the host system, the tertiary storage of the host system having an access time that is greater than the access time for the secondary storage of the host system.

Claim 2 (canceled).

3. The method of claim 1, the downgrading of the identified image file further comprising:
  - performing a lossless compression on the identified image file to generate the downgraded file.
4. The method of claim 1, the downgrading of the identified image file further comprising:
  - performing a lossy compression on the identified image file to generate the downgraded file.
5. The method of claim 1, the downgrading of the identified image file further comprising:
  - reducing resolution of the identified image file to generate the downgraded file.

6. The method of claim 1, the downgrading of the identified image file further comprising:

reducing pixel size in the identified image file to generate the downgraded file.

7. The method of claim 1, the downgrading of the identified image file further comprising:

converting a color image from one color format to another color format that requires less data to represent color in the identified image file to generate the downgraded file.

8. The method of claim 7, the downgrading of the identified image file further comprising:

converting a color image to a color palette version of the color image to generate the downgraded file.

9. The method of claim 1, the downgrading of the identified image file further comprising:

combining a plurality of downgrade operations to reduce the size of the identified image file to generate the downgraded file.

10. The method of claim 1, the downgrading of the identified image file further comprising:

retrieving a full resolution version of the identified image file from tertiary storage; and

performing a downgrade operation on the full resolution version of the identified image file to generate the downgraded file.

Claim 11 (Canceled).

12. The method of claim 1, the comparison of the file metadata to the downgrade threshold including:

comparing file metadata to a file access frequency threshold.

13. The method of claim 1, the comparison of the file metadata to the downgrade threshold including:

comparing file metadata to a last access time threshold.

14. The method of claim 1, the comparison of the file metadata to the downgrade threshold including:

comparing file metadata to a classification threshold.

15. A system for managing image files in a host system comprising:

a file data volume for storing file metadata that corresponds to image files stored in a secondary storage for a host system;

a file selector for retrieving file metadata from the file data volume and comparing the retrieved metadata to at least one downgrade threshold to identify an image file stored in the secondary storage of the host system for downgrading;

a file reducer for downgrading the identified image file; and

a file controller for generating file metadata for storage in the file data volume and for storing the downgraded file in the secondary storage of the host system and for storing the identified image file in tertiary storage of the host system, the tertiary storage for the host system having an access time that is greater than the access time for the secondary storage of the host system.

Claim 16 (Canceled).

17. The system of claim 15 wherein the file reducer includes a compressor for compressing the identified image file.



18. The system of claim 15 wherein the file reducer includes a color reducer for converting a color image from one color format to another color format that uses less data to represent color.

19. The system of claim 15 wherein the file reducer includes an image resolution reducer for reducing resolution of the identified image file.

20. The system of claim 15 wherein the file reducer includes a pixel size reducer for reducing a number of bits to represent a pixel in the identified image file.

#### **(9) EVIDENCE APPENDIX**

No evidence was submitted under rules 1.130, 1.131, or 1.132.

Additionally, no other evidence has been entered in the record by the Examiner upon which the Applicant relies.

#### **(10) RELATED PROCEEDINGS APPENDIX**

No proceedings were identified in the Related Appeals and Interferences presented above. Therefore, no decisions of a court or the Board are contained herein.